

# RFID TAG HAVING COMBINED BATTERY AND PASSIVE POWER SOURCE

## ABSTRACT OF THE DISCLOSURE

An RFID tag is powered both by an internal battery and passively by an interrogating RF field. As a result, the RFID tag can be passively powered after the internal battery has been depleted. More particularly, an embodiment of the RFID tag includes electronic circuitry to provide RFID functionality, and an energy storage device coupled to the electronic circuitry to provide an operational voltage thereto. A battery is operatively coupled to the energy storage device to charge the energy storage device. A rectified RF power source derived from an interrogating RF field is also operatively coupled to the energy storage device to charge the energy storage device. The rectified RF power source and the battery are electrically separated from each other. The energy storage device remains charged by the battery in the absence of the RF interrogating field while the battery has remaining capacity. After the battery has become depleted, the energy storage device is charged by the presence of the RF interrogating field.